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ABSTRACT

This study explored the relative strength of relationships between text, child, adult reader, and mode of story reading style in contributing to comprehension and memory in young children. Specifically, the study asked: What is the correlational relationship between the four vertices of a tetrahedral model of understanding and memory in children's story book recall? Further, what are the educational implications of the relationships? Five-year-olds were read stories using three different modes of adult-child interaction. The control condition involved an adult simply reading the story; the questioning condition involved the adult stopping periodically during reading to ask the child questions; and the co-construction condition involved interaction between the adult reader and child. Children were then asked to retell the story. Findings show that while the interaction during co-construction was not significantly correlated with story recall, the interaction between adult and child seemed to facilitate the children's memory for the specific episodic content of the story. The relationship between recall and text is progressively stronger based on the amount of social interaction with an adult. (EV)

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A Multidimensional Model for Comprehension and Memory in Young Children

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Abstract

This study explores the relationship between author, child, adult reader, and mode of story reading style in an attempt to determine the relative strength of the relationship between each in contributing to comprehension and memory in young children. It was found that the relationship between text and recall is strongest in the co-construction condition, slightly less strong in the questioning condition and weakest in the control condition. The relationship between text and recall is the inverse of that demonstrated by correlation coefficients between interaction and recall. The correlation coefficients between recall and both adult and child talk are strongest in the questioning condition and weakest in the co-construction condition.

Research Question

What is the correlational relationship between the four vertices of a tetrahedral model of understanding and memory in children's story book recall? Further, what are the educational implications of the relationships?

Rationale

A number of studies have confirmed that successful story readings involve considerable social interaction around the story text and illustrations. Victor Watson (1992) describes children's literature as the "imaginative creation of a cultural space in which writers find ways of exploring what they want to say to-and-about children: an arena in which children and adults can engage in various kinds of shared and dynamic discourse."

Talk about a story during an adult child read aloud is an integral part of storybook reading. Some educators have, in fact, attempted to make the case that the interaction

surrounding the text and not the text itself makes story reading so important to the development of literacy. This leads to a particularly contentious question among educators who are concerned with issues of children's comprehension and memory.

To summarize briefly, there are three positions commonly taken by educators. These positions center on the relative influence of the text, the reader, and the interaction or context in which the story reading takes place. A tetrahedral model of understanding and memory was proposed by Jenkins in 1979. The tetrahedral model acknowledges the contribution of the child, the text, the orientation or instructions given (the instructional support of the adult) and the task. The model provides a useful framework. In terms of the present study, the four vertices of the model represent the text, the child, the adult (instructional support), and the task (recall of a story text). The model provides the basis for our research question.

Asking children to retell a story that they have heard or read or to recall information in general, is an important way that teachers and researchers access children's understanding of events. Additionally, the ability to retell a story or to answer comprehension questions appropriately is significant to how we think about academic success. This being the case, it is crucial that we understand how this ability develops and the relative influence of text, individual, instruction, and task on the facilitation of literacy development for individual children.

Methodology

Twenty-four children (15 female, 9male) from a Chicago Public School participated in the study. The mean chronological age was 5.8 months. Four of the children were classified as bilingual. Thirty-eight percent of students were low income, defined in Chicago Public Schools as any child qualifying for the federally subsidized

school lunch program. Four racial groups were represented (37.5 % African American, 29.0 % White, 21.0 % Hispanic, and 12.5% Asian).

Materials

Three books by the Australian author, Mem Fox were chosen for the study. Each of the stories involved the relationship between a young child and an elderly individual, contained 45 sentences each, and had a high degree of picture to text correlation.

Design

Three conditions (varying degrees of interaction) based on Dickinson's 3 models of teacher story-book reading behavior (Dickinson, 1994) were tested. The three conditions were, (1) a control condition modeled on Dickinson's "performance style," in which the child has no direct interactions with the adult reader beyond having the story read; (2) a questioning condition paralleling the didactic interactional approach identified by Dickinson in which the story is interrupted and the child is asked questions regarding the story content; and (3) a co-construction condition in which the child and the adult are interacting freely over the book. These conditions are viewed as three individual locations on a continuum in which varying degrees of social (i.e. instructional) support are offered.

A modified Latin Square design with repeated measures was employed. The order of treatments and order of stories were counterbalanced across children in order to control for book and/or treatment effects.

The extent to which the children were able to extract and retain information from the stories was assessed by asking them to retell the story. All phases of the interaction and post interaction were audio taped and later transcribed verbatim. Narrative utterances of the adult and child were parsed into independent clauses and coded according to the episodic structure identified in the Stein and Glen (1979) story

grammar categories. All three texts were likewise parsed and analyzed for episodic content. Inter-rater reliability checks were conducted at each phase of the analysis.

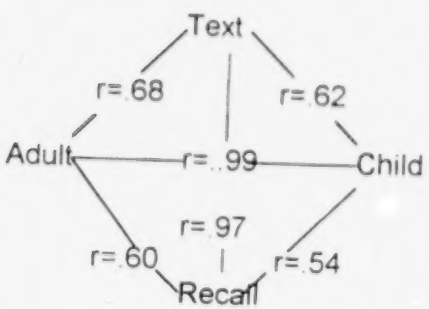
Analysis

Correlation coefficients between the teacher's contribution to the interaction and the child's contribution were calculated in order to investigate the relationship between what the teacher does and what the child does in terms of the episodic structure of the interaction. Correlation coefficients between the adult's and child's interactional contribution and the child's narrative recall provided a measure of the relationship between test and interaction. Finally, correlation coefficients between the child's narrative recall and the text provided a measure of the relationship between text and recall.

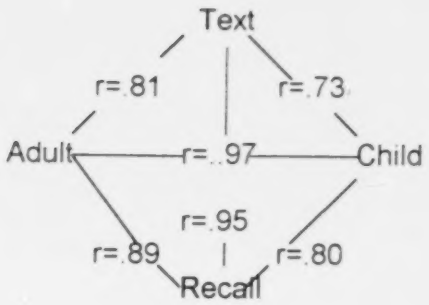
Findings

Findings are presented graphically below and on the following page for ease of understanding.

Co-Construction Condition



Questioning Condition



Control Condition

Text----------(r=.90)----------Recall

With the exception of the adult and child interactional contributions during co-construction and text structure, all of the correlation coefficients between vertices were statistically significant. The relationship between text and recall is strongest in the co-construction condition, slightly less strong in the questioning condition and weakest in the control condition. The relationship between text and recall is the inverse of that demonstrated by correlation coefficients between interaction and recall. The correlation coefficients between recall and both adult and child talk are strongest in the questioning condition and weakest in the co-construction condition.

Educational Implications

This would seem to indicate that the interactions during the co-construction condition were more widely ranging and possibly involved with issues not as directly related to the structure of the text as was the interaction during the questioning

condition. This is confirmed by analysis of the interaction protocols. However, regardless of the wide ranging nature of the interaction between adult and a child during co-construction, the children filter out most of that which is not directly related to story structure when retelling the story on their own.

Oddly enough, even though the interaction during co-construction was not significantly correlated with story recall, the interaction between adult and child seems to facilitate the children's memory for the specific episodic content of the story. The relationship between recall and text is progressively stronger based on the amount of social interaction with an adult. This finding provides further evidence that social interaction during story book reading facilitates comprehension and memory in young children. However, to quote Dreeben and Barr "the text matters." The individual child responds in unique ways (Lo, 1997) and the adult's interaction with the child is an important component of the story reading experience which helps to foster understanding. Undeniably, however, the text itself constrains what is possible for both adult and child. More importantly, children, even very young children, have an extraordinary grasp of story and episodic structure and are able to use an author's structure in a story retelling of their own.

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